

10, 2  
# HW  
Key

p 536 47-61 odd 54, 62

47.  $\log_9 x = 2$

$$9^2 = x$$

$$\boxed{81 = x}$$

49.  $\log_{64} y \leq \frac{1}{2}$

$$64^{\frac{1}{2}} \geq y$$

$$\boxed{0 < y \leq 8}$$

51.  $\log_{\frac{1}{7}} x = -1$

$$\left(\frac{1}{7}\right)^{-1} = x$$

$$\boxed{7 = x}$$

53.  $\log_2 (3x - 8) \geq 6$

$$2^6 \leq 3x - 8$$

$$64 + 8 \leq 3x$$

$$24 \leq x$$

$$\boxed{x \geq 24}$$

54.  $\log_{10} (x^2 + 1) = 1$

$$10^1 = x^2 + 1$$

$$9 = x^2$$

$$\boxed{\pm 3 = x}$$

BOTH WORK!

55.  $\log_b 64 = 3$

$$(b^3)^{\frac{1}{3}} = (64)^{\frac{1}{3}}$$

$$\boxed{b = 4}$$

57.  $\log_5 5^{6n+1} = 13$

$$5^{13} = 5^{6n+1}$$

$$13 = 6n + 1$$

$$12 = 6n$$

$$\boxed{2 = n}$$

61.  $\log_{10} (a^2 - 6) > \log_{10} a$

$$a^2 - 6 > a$$

$$a^2 - a - 6 > 0$$

$$(a-3)(a+2)$$

$$x < -2 \text{ or } x > 3$$

$$\boxed{a > 3}$$

62.  $\log_7 (x^2 + 36) = \log_7 100$

$$x^2 + 36 = 100$$

$$x^2 = 64$$

$$\boxed{x = \pm 8}$$

BOTH WORK

-2 3